```
(FILE 'HOME' ENTERED AT 13:06:01 ON 21 MAR 2001)
     FILE 'REGISTRY' ENTERED AT 13:06:08 ON 21 MAR 2001
L1
            443 (1<AG<4 AND 0<CU<2 AND 50<SN)/MAC
L2
          14941 (0<NI<.1 OR 0<FE<.1)/MAC
L3
             20 L1 AND L2
     FILE 'HCA' ENTERED AT 13:07:19 ON 21 MAR 2001
L4
            249 L3
           9925 (TIN OR SN) AND (IRON OR FE OR NICKEL OR NI) AND (SILVER OR
L5
AG)
L6
             24 L4 AND L5
                SET NOTICE DISPLAY 1
     INDEX 'IFICLS, PATOSEP, PATDPA, INPADOC' ENTERED AT 13:15:32 ON 21 MAR
     2001
                SEA GB 2319039/PN, APPS
               1 FILE INPADOC
L7
                QUE GB 2319039/PN, APPS
     FILE 'INPADOC' ENTERED AT 13:15:35 ON 21 MAR 2001
L8
              1 S L7
                SET NOTICE LOGIN DISPLAY
     FILE 'HCA' ENTERED AT 13:16:34 ON 21 MAR 2001
                SELECT L6 IPC 1 3 5 9 10 12 15 17 23
         125805 E1-7
L9
L10
          23225 (TIN OR SN) (1A) (ALLOY OR SOLDER? OR BALANC? OR REMAIN? OR
REST?
            871 L10 AND (SILVER OR AG) AND (COPPER OR CU) AND (NICKEL OR NI
L11
OR
L12
            289 L9 AND L11
L13
            143 L12 AND SOLDER?
                E ITO TOSHIHIDE/IN, AU
L14
              9 E3-4
                E HARA SHIRO/IN, AU
L15
             30 E3-4
L16
             39 L14 OR L15
L17
              1 L11 AND L16
L18
         892153 LIQUI?
L19
              6 L13 AND L18
                E JP1177370/PN
                E JP01177370/PN
                E JP06418981/PN
                E JP06471592/PN
                E JP04305073/PN
L20
              1 E3
                E JP02179386/PN
L21
              1 E3
```

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AN
     134:31904 HCA
ΤI
     Lead-free solder
IN
     Domi, Shinjiro; Sakaguchi, Koichi; Nakagaki, Shigeki; Suganuma, Katsuaki
     Nippon Sheet Glass Co., Ltd., Japan
SO
     PCT Int. Appl., 21 pp.
     CODEN: PIXXD2
DT
     Patent
LA
     Japanese
FAN.CNT 1
     PATENT NO.
                    KIND DATE
                                         APPLICATION NO. DATE
                                          ______
PΙ
    WO 2000076717 A1
                            20001221
                                         WO 2000-JP3631 20000605
        W: CA, CN, KR, US
        RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
            PT, SE
     JP 2001058287
                      A2
                            20010306
                                           JP 2000-168477
                                                            20000606
PRAI JP 1999-164737
                     19990611
    The solder contains \mathbf{Sn} .gtoreq.90, \mathbf{Ti} 0.001-1.0, \mathbf{O}
     0.1-1.5, Ag 0.1-6.0, Cu 0.001-6.0, Zn 0.001-3.0, Al
     0.001-3.0, Bi, Si, and/or Sb .ltoreq.10, Si 0.001-1.0, Fe,
    Ni, Co, Ga, Ge, and/or P .ltoreq.1.0%, and has a liquidus
    200-400.degree..
RE.CNT 7
RE
(1) Central Glass Co Ltd; JP 1177370 A 1999
(2) Hitachi Ltd; JP 6418981 A 1989
(3) Nippon Kogaku K K; JP 6471592 A 1989
(6) Tanaka Kikinzoku Kogyo K K; JP 04305073 A 1992 HCA
(7) Tokuriki Honten Co Ltd; JP 02179386 A 1990 HCA
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ALL CITATIONS AVAILABLE IN THE RE FORMAT

AN 134:45513 HCA Tin-silver-copper-germanium solder alloy ΤI Yamashita, Mitsuo; Tada, Shinji; Shiokawa, Kunio Fuji Electric Co., Ltd., Japan IN PA Jpn. Kokai Tokkyo Koho, 4 pp. SO CODEN: JKXXAF DT Patent LΑ Japanese FAN.CNT 1 APPLICATION NO. DATE PATENT NO. KIND DATE -----\_\_\_\_\_ JP 2000343273 A2 20001212 JP 1999-153372 19990601 PΙ A sn solder alloy contains Ag .ltoreq.4, Cu .ltoreq.2, Ge > 0.1 and .ltoreq.0.3%, and optionally .ltoreq.1% Ni

. The addn. of Ge and Ni prevents Sn oxidn. Pb-free

solder is suitable for electronic applications.

AN 133:285123 HCA

TI Lead-free solder of tin-silver-bismuth-copper alloy

IN Moriyama, Shigeo; Moribayashi, Toshiyuki; Takenaka, Junichi

PA Nihon Genma Mfg. Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp. CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO. KIND DATE APPLICATION NO. DATE

----
JP 2000288772 A2 20001017 JP 2000-25388 20000202

PRAI JP 1999-25342 19990202

AB The solder of **Sn** alloy contains **Ag** 2.0-5.0, Bi
0.1-1.3, **Cu** 0.01-2.0, and P 0.003-0.006 and/or **Ni**0.005-0.1%. The alloy has high elongation (.gtoreq.30%) and wettability.

133:154041 HCA AN

ΤI Lead-free solder

Yamashita, Mitsuo; Tada, Shinji; Shiokawa, Kunio Fuji Electric Co., Ltd., Japan IN

PA

so Ger. Offen., 8 pp.

CODEN: GWXXBX

Patent DT

LΆ German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10003665 JP 2000280090	A1 A2	20000803 20001010	DE 2000-10003665 JP 2000-805	20000128 20000106

19990129 PRAI JP 1999-22403

The Pb-free solder contains Bi .ltoreq.21, Ag .ltoreq.4, Cu .ltoreq.2, Ni .ltoreq.0.2 and/or Ge .ltoreq.0.1%, and  $s_n$  balance. Wettability and heat resistance of the solder is higher than that of conventional  $s_n$ -Bi solders. M.p. of the solder is below 221.degree. (the eutectic point of the  $s_n$ -Ag alloy).